cc: Sig Allen
64492

TECHNICAL MEMORANDUM

New Bedford 4.2 64492

4959-22

DATE: September 20, 1988

TO: Frank Ciavattieri, EPA RPM, New Bedford Harbor

FROM: Hans Krahn/Doug Allen, E.C. Jordan

SUBJECT: Estimate of Mass of PCBs in New Bedford Harbor

At your request, Hans Krahn has calculated an estimate of the total mass of PCBs for New Bedford Harbor: Acushnet River Estuary, and the Lower Harbor (including two small areas just outside of the Hurricane Barrier).

The estimated PCB mass for the Hot Spot and the Estuary was calculated using the PCB isopleth maps constructed by E.C. Jordan. Data plotted on these maps was overlaid onto the U.S. Army Corps of Engineers grid network for this area Sediment volumes and associated PCB concentrations were derived from this grid network. Sampling data within each grid showed a range of PCB concentrations. This range was retained during the calculation of PCB mass. These grids also included interpreted PCB concentrations for areas where sampling data was unavailable. Since the USACE grid did not extend into the Lower Harbor and Bay, sediment volumes were based solely on the Jordan isopleth map data.

Jordan's estimate of PCB mass was compared to the estimate made by Danny Averett, USACE-WES. The WES calculations were based on PCB concentrations measured in sediment core samples collected from select grids. A mean value for sediment-PCB concentration was established for each grid and assumed to be representative of the PCB concentrations throughout that grid. Where no core sample/PCB data was available for a particular grid, an average PCB concentration value was assigned to that grid based on the PCB concentrations measured in adjacent grids.

ESTIMATE OF PCB MASS IN NEW BEDFORD HARBOR

AREA	MASS OF PCBs (lbs)
Hot Spot	44,300 to 177,300
Acushnet River Estuary	56,400 to 565,000 (330,000 USACE-WES)
Lower Harbor & Bay	6,600 to 27,000
Total:	107,300 to 769,300